Use Attainability Analysis

for

WBID 0132 Coon Creek

Submitted by Pickett Ray and Silver

To Missouri Department of Natural Resources Water Protection Program

Date Received: October 31, 2007

Data Sheet A – Water Body Identification

Water Body Name	e (from USGS 7.5' quad): C	coon Creek
Missouri Water Bo	ody Identification (WBID) N	Number: 132
8-digit HUC: 711	0006	County: Monroe
Upstream Legal D	escription (from Table H):	8,53N,13W
Downstream Lega	l Description (from Table H): Mouth
Number of sites ev	valuated: 5	
List all sites numb 132-1, 132-5, 132-	ers, listed consequently upst 2, 132-3, 132-4	tream to downstream:
	ns that may be of interest.	tire segment with assessment sites clearly labeled.
II. <u>Facility Informati</u>	on (list all permitted discharge	· • ·
II. <u>Facility Informati</u>	•	
II. Facility Informati Facility Name(s) a	on (list all permitted discharge and Permit Number(s): Reni	· • ·
II. Facility Informati Facility Name(s) a	on (list all permitted discharge and Permit Number(s): Reni no Permit	· • ·
II. Facility Informati Facility Name(s) a III. UAA Surveyor (p Name of Surveyor	on (list all permitted discharge and Permit Number(s): Reni no Permit	Telephone Number: 636-397-1211
II. Facility Informati Facility Name(s) a III. UAA Surveyor (p Name of Surveyor Organization/Emp	on (list all permitted discharge and Permit Number(s): Reni please print legibly) Matt Cosby loyer: Pickett, Ray & Silver	Telephone Number: 636-397-1211

Data Sheet A Page 1 of 1

\\3serverprs\\Projects\07031\dwg\07031_MODN_01E\0132 Coon Creekdwg, 10/26/2007 1:58:58 PM, 1:2000, MATT COSBY

Site 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

	Date & 7	Time: 10/17/07 11AM		Site Location Description (e.g., road crossing): Downstream of road crossing Highway M				
	Personne	el (Data Collectors): Matt Cosby, La	uren Strange					
	Current '	Weather Conditions: Cloudy 60°		Facility Name: Renick WWTF				
	Weather	Conditions for Past 10 days: 4.29 in	ches of rain	Permit Number: MO 0104019				
	Drought	Conditions?: No drought □; Phase	x; Phase II □;	Phase III □; Phase IV	/ □; Unknown □			
Si	te Locat	ion:						
	LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)							
	Site 01	Easting (UTM X): 552671m	Northing (UT	M Y): 4360674m	Horizontal Accuracy: PDOP	6.6		
	Cita 11	Earting (UTM V), 552820	Northing (LIT	TM 37), 42(0)((9,	Horizontal Accuracy:	(5		

Northing (UTM Y): 4360668m

6.5

PDOP

Photos: See attached photos and descriptions

Easting (UTM X): 552829m

otos. See atta	ichea photos ana des	sei ipuons					
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving ☐ SCUBA diving		☐ Tubing	☐ Water skiing							
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting							
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:							
Describe: (Include number of when conducting interviews.)	Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview										

Data Sheet B Page 1 of 3

Data Sheet B – Site Characterization (continued)

Surrounding Cond	itions*: (Mark all that pr	omote or impede re	creational uses. Attach	n photos of evidence	ence or unusual i	tems of inte	rest.)	
☐ City/county park	s	☐ MDC co	nservation lands	☐ Urbaı	n areas	□R	ural Residential	
☐ Campgrounds	☐ State parks	☐ National	forests	☐ Natur	e trails	□ S	☐ Stairs/walkway	
☐ Boating accesse	s	☐ No tresp	ass sign	X Steep	slopes	o o	Other:	
Comments: None	,		-					
Evidence of Humai	1 Use*: (Attach photos a	nd reference in "Pho	otos" section)					
☐ Roads	☐ Foot paths/pri	nts 🗆 Do	ck/platform	☐ Campin	g Sites	☐ Rope	eswings	
□ RV / ATV Tracl Comments / Other:	s ☐ Fire pit/ring	□ NP	DES Discharge	☐ Fishing	Tackle	☐ Lives	stock Watering	
Substrate*: (These va	lues should add up to 100%.)							
% Cobble	20% Gravel	10%	Sand	10% Silt	60% Mu	d/Clay	% Bedrock	
Aquatic Vegetation None	** (Note amount of vegetati	on or algal growth	at the assessment site)					
Water Characteris	tics*: (Mark all that apply)						
Odor:	☐ Sewage ☐ I	⁄lusky [Chemical	□ None	ХО	ther: Sulfi	ur	
Color:	□ Clear □ C	Green X	Gray	X Milky	□ C	ther:		
Bottom Deposit:	X Sludge	solids X	Fine sediments	□ None		ther:		
Surface Deposit:	□ Oil □ S	cum [] Foam	X None		ther:		

Data Sheet B Page 2 of 3

^{*}This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	uccess recurren (m)				
Comments: (Please recor	d any additional comments here	.)			
Please verify that you	u have completed all	l sections, check	ed all applicabl	e boxes, and that tl	ne form is
complete.					
Surveyor's Signature:			Date of Surve	y:_10/17/07	

Data Sheet C - Field Survey Results

																		Disso	lved O	xygen		
	Waterbo	ody ID:	132			Site #:	1									Date: 10	0/17/07			Time: 1	1:00 am	
	Estimate	ed Chann	nel Incisi	on:	0.2	(m) (hei	ght betw	een low	bank wic	lth and w	ater)					Di	issolved	Oxvgen:	7.15		(mg/L)	
	GPS Lo	cation - I	Easting (UTM X)	, Northir	ng (UTM	Y), Hor	izontal A	ccuracy	Estimate	PDOP							, 8	7,720		,(8)	
			: 552671			-	UTM Y:					6.6				Di	issolved	Oxygen:			(% sat)	
	11	UTM X	: 552829	m			UTM Y:	4360668	<u>sm</u>		•	6.5					Specifi	ic Cond:			(µS/cm))
	Average	Stream	Width:			4		(meters)	L	ength of	Survey S	Segment:	150		(meters)		~ F *****				(()	,
	(To dete	rmne Le	ngth of F	ngth of Reach)					(2	0x avera	ge strear	n width)				Wa	ter Temp	erature:	13.7		(°C)	
	Fiel	d Staff:	Matt Co	sby & L	auren Sti	range																
	Transect Cross-Section																					
														_		.0		0				
	Distance	1	Distance	2	Distance	3	0 Distance	4	Distance	5	Distance	6	Distance	7	Distance	8	Distance	9	Distance	10	Distance	11
Station	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.47	0.12	0.46	0.21	0.31	0.14	0.16	0.08	0.45	0.14	0.48	0.29		>1		>1	0.35	0.21		>1		>1
2	0.94	0.10	0.92	0.38	0.62	0.19	0.32	0.17	0.90	0.23	0.96	0.36					0.70	0.27				
3	1.4	0.11	1.4	0.42	0.93	0.27	0.48	0.18	1.4	0.24	1.4	0.36					1.1	0.23				
4	1.9	0.09	1.8	0.42	1.2	0.31	0.64	0.21	1.8	0.21	1.9	0.37					1.4	0.28				
5	2.4	0.09	2.3		1.6				2.3	0.15	2.4	0.61					1.8	0.17				
6	2.8	0.10			1.9		0.96				2.9						2.1	0.13				
7	3.3	0.10				0.22		0.10		0.10		0.75					2.5	0.09				
, e	3.8	0.15	3.7		2.5	0.14		0.06	3.6		3.8						2.8	0.08				
9	4.2	0.13				0.14		0.00	4.1	0.00	4.3	0.43					3.2	0.08				
													_		_							
Right Bank Feature Type	4.7	0	4.6	0	3.1	0	1.6	0	4.5	0	4.8	0	5	0	5	0	3.5	0		0		0
(riffle, run, or pool)			R	un	Po	ool	R	un	R	un	Po	ool	Po	ool	Rı	un	Po	ool	P	ool		

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 10/17/07 12:00 pm	Site Location Description (e.g., road crossing): Downstream of road crossing at Hwy EE.		
Personnel (Data Collectors): Matt Cosby, Lauren Strange	Downstream of road crossing at riwy E.E.		
Current Weather Conditions: Cloudy 60°	Facility Name: Renick WWTF		
Weather Conditions for Past 10 days: 4.29 inches of rain	Permit Number: MO 0104019		
Drought Conditions?: No drought □; Phase I x; Phase II □	; Phase III □; Phase IV □; Unknown □		

Site Location:

LOCATIO	LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)										
Site 01	Easting (UTM X): 554265m	Northing (UTM Y): 4363483m	Horizontal Accuracy: PDOP	3.8							
Site 11	Easting (UTM X): 554395m	Northing (UTM Y): 4363516m	Horizontal Accuracy: PDOP	4.9							

Photos: See attached photos and descriptions

Photo ID#	o ID# Photo Purpose		Photo Purpose	Photo ID#	Photo Purpose		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving ☐ SCUBA diving		☐ Tubing	☐ Water skiing						
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting						
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:						
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)										

Data Sheet B Page 1 of 3

Data Sheet B – Site Characterization (continued)

Su	rrounding Condit	ions*: (Mark all that pro	mote or impede re	creational uses. Attach	photos of evid	ence or unusual i	tems of inte	erest.)				
	☐ City/county parks	□ Playgrounds	☐ MDC co	nservation lands	☐ Urbaı	n areas	□R	Rural Residential				
	☐ Campgrounds	☐ State parks	☐ National	forests	☐ Natur	☐ Nature trails		Stairs/walkway				
	☐ Boating accesses	☐ Fence	☐ No tresp	ass sign	X Steep	slopes		Other:				
	Comments: None	,		-								
Ev	idence of Human	Use*: (Attach photos and	d reference in "Ph	otos" section)								
	☐ Roads	☐ Foot paths/pri	nts 🗆 Do	ck/platform	☐ Campin	g Sites	□ Rop	e swings				
	☐ RV / ATV Tracks Comments / Other:	s ☐ Fire pit/ring	□ NP	DES Discharge	☐ Fishing	Tackle	☐ Live	estock Watering				
Su	bstrate*: (These valu	es should add up to 100%.)										
	% Cobble	10% Gravel	%	Sand	% Silt	80% Mu	d/Clay	10% Bedrock				
Aq	uatic Vegetation*	(Note amount of vegetation	on or algal growth	at the assessment site)								
W	Water Characteristics*: (Mark all that apply.)											
	Odor:	☐ Sewage ☐ M	Iusky 🗆	Chemical	□ None	ХО	ther: Sulf	fur				
	Color:	□ Clear □ G	reen X	Gray	X Milky	□ O	ther:					
	Bottom Deposit:	□ Sludge □ S	olids X	Fine sediments	□ None		ther:					
	Surface Deposit:	□ Oil □ Se	cum [] Foam	X None		ther:					

Data Sheet B Page 2 of 3

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Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
L	1		1		
Comments: (Please record	d any additional comments here	e.)			
	v h ava aavanlatad all		and all applicable	o h ovos ovod 4h o4 4l	ha farma ta
	u have completed all	l sections, check	ted all applicabl	e boxes, and that tl	he form is
	u have completed all	l sections, check	ced all applicabl	e boxes, and that tl	he form is
lease verify that you	u have completed all	l sections, check	ted all applicabl	e boxes, and that tl	he form is
omplete.	u have completed all			e boxes, and that tl y:_10/17/07	
omplete.	-		Date of Surve		

Data Sheet C - Field Survey Results

																		Disso	lved O	xygen		
	Waterbo	ody ID:	132		•	Site #:	2									Date: 10	/17/07			Time: 12	2:00 pm	
	Estimat	ed Chanr	nel Incisi	on:	1.0	(m) (hei	ght betw	een low	bank wic	lth and w	ater)					·			6.00	•	-	
	GPS Lo	cation - l	Easting (UTM X)	, Northin	ng (UTM	Y), Hor	izontal A	ccuracy	Estimate	PDOP					D ₁	ssolved	Oxygen:	6.02		(mg/L)	
	01	UTM X	: 554265	m			UTM Y:	4363483	3m			3.8				Di	ssolved	Oxygen:			(% sat)	
	11	UTM X	: 554395	m			UTM Y:	4363516	óm			4.9					Specif	ia Cand:			(uS/om)	
	Average	e Stream	Width:			6		(meters)	L	ength of	Survey S	Segment:	150		(meters)		Specif	ic Cona.			(μ5/сп)	
	(To dete	ermne Le	ength of l						(2	0x avera	ge strear	n width)				Wa	ter Tem _l	perature:	13.9		(°C)	
	Fie	ld Staff:	Matt Co	osby & L	auren Str	range																
										Trai	nsect C	ross-Sec	ction									
	()1	e d)2	0	3	O)4	0	5	0	6	0	7	0	8	0	19	1	10	1	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.32	0.20		>1	0.42	0.05		>1	0.53	0.05		>1	0.60	0.06		>1		>1		>1	0.40	0.09
2	0.64	0.27			0.84	0.11			1.10	0.11			1.2	0.17							0.80	0.14
3	0.96	0.36			1.3	0.14			1.6	0.20			1.8	0.26							1.2	0.15
4	1.3	0.45			1.7	0.19			2.1	0.31			2.4	0.34							1.6	0.15
5	1.6				2.1				2.7	0.44			3.0	0.35							2.0	
6	2.0				2.5	0.15			3.2	0.46			3.6	0.32							2.4	0.14
7	2.2				2.9				3.7	0.51			4.2	0.14							2.8	0.13
,	2.6				3.4				4.2	0.43			4.8	0.14							3.2	0.10
9					3.4				4.8	0.45			5.4								3.6	
,														0.11								0.05
Right Bank Feature Type	3.2	0	6	0	4.2	0	6	0	5.3	0	7	0	6.0	0	8	0	8	0	8	0	4.0	0
(riffle, run, or pool	R	un	Po	ool	R	un	Po	ool	Ri	un	Po	ool	Ri	un	R	un	R	un	R	un	Rif	ffle

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Data Sheet B - Site Characterization

(must be completed for each site)

	Date & 7	Гіте:	10/17/07 1	:00 pm			Site Location Des Upstream of road		ion (e.g., road cross	ing):
	Personne	el (Dat	ta Collectoi	rs): Matt Cosby, L	auren	Strange	Opsiream of road	CIOSS	sing at 2500	
	Current	Weath	er Conditio	ons: Cloudy 60°			Facility Name: Re	enick	WWTF	
	Weather	Cond	itions for P	ast 10 days: 4.29	inches	of rain	Permit Number: N	MO 0	104019	
	Drought	Condi	tions?: No	drought □; Phase	e I x; Pl	hase II □	; Phase III □; Phase	· IV 🗆	i; Unknown □	
Si	te Locat	tion:								
	LOCATIO	ON CO	ORDINATES	S (UNIVERSAL TRA	NSVEF	RSE MERO	CATOR PROJECTION	N, IN I	METERS)	
	Site 01	East	ing (UTM	X): 557653m	Nor	thing (U	TM Y): 4365578m		Iorizontal Accuracy	: 3.4
	Site 11	East	ing (UTM	X): 557792m	Nor	thing (U'	TM Y): 4365413m		Iorizontal Accuracy	: 6.6
Ph				otos and desc						
	Photo II	D#	Pho	to Purpose	Photo	ID#	Photo Purpo	se	Photo ID#	Photo Purpose
	Photo II	D#	Pho	to Purpose	Photo	ID#	Photo Purpo	se	Photo ID#	Photo Purpose
	Photo II	D#	Pho	to Purpose	Photo	ID#	Photo Purpo	se	Photo ID#	Photo Purpose
						,			<u> </u>	
Us	es Obse	rved ³	*: (Uses actu	ally observed at time	of survey	v.)				
	☐ Swin	nming		☐ Skin diving		□ SCU	UBA diving		Tubing	☐ Water skiing
	☐ Wind	l surfii	ng	☐ Kayaking		□ Воа	ating		Wading	☐ Rafting
	☐ Hunt	ing		☐ Trapping		☐ Fish	ning	X	None of the above	☐ Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D-Recreational Use Interview

Data Sheet B Page 1 of 3

Revised: September 4, 2007

when conducting interviews.)

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

rrounding Condit	IONS*: (Mark all that pro	mote or impede recreational uses. Atta	ch photos of evide	nce or unusual ite	ems of in	terest.)
☐ City/county parks	s □ Playgrounds	☐ MDC conservation lands	☐ Urban	areas		Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature	e trails		Stairs/walkway
☐ Boating accesses	X Fence	☐ No trespass sign	X Steep s	slopes		Other:
Comments: None					'	
TVOIC						
vidence of Human	Use*: (Attach photos and	1 reference in "Photos" section)	T			
X Roads	☐ Foot paths/prin	nts Dock/platform	☐ Camping	g Sites	□ Rop	pe swings
□ RV / ATV Tracks	s ☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing	Гаскlе	□ Liv	estock Watering
Comments / Other:						
ıbstrate*: (These valu	es should add up to 100%.)					
abstrate*: (These valu	es should add up to 100%.) % Gravel	20% Sand	10 % Silt	60% Muc	l/Clay	% Bedrock
		20% Sand	10 % Silt	60% Mud	l/Clay	% Bedrock
10% Cobble	% Gravel	I		60% Mud	l/Clay	% Bedrock
10% Cobble	% Gravel	20% Sand n or algal growth at the assessment site		60% Muc	l/Clay	% Bedrock
10% Cobble	% Gravel	I		60% Mud	l/Clay	% Bedrock
10% Cobble	% Gravel	I		60% Muc	l/Clay	% Bedrock
10% Cobble	% Gravel	I		60% Muc	l/Clay	% Bedrock
10% Cobble quatic Vegetation* None	% Gravel	n or algal growth at the assessment site		60% Mud	l/Clay	% Bedrock
quatic Vegetation* None	% Gravel	n or algal growth at the assessment site		60% Mud		% Bedrock
10% Cobble quatic Vegetation* None ater Characteristi Odor:	% Gravel (Note amount of vegetation (CS*: (Mark all that apply.)	n or algal growth at the assessment site	e)		ther:	% Bedrock
ater Characteristi Odor: Color:	% Gravel % Gravel (Note amount of vegetation (CS*: (Mark all that apply.) Sewage	n or algal growth at the assessment site	X None X Milky	□ Ot	ther:	% Bedrock

Data Sheet B Page 2 of 3

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Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
L	1		1		
Comments: (Please record	d any additional comments here	e.)			
	v h ava aavanlatad all		and all applicable	o h ovos ovod 4h o4 4l	ha farma ta
	u have completed all	l sections, check	ted all applicabl	e boxes, and that tl	he form is
	u have completed all	l sections, check	ced all applicabl	e boxes, and that tl	he form is
lease verify that you	u have completed all	l sections, check	ted all applicabl	e boxes, and that tl	he form is
omplete.	u have completed all			e boxes, and that tl y:_10/17/07	
omplete.	-		Date of Surve		

Data Sheet C - Field Survey Results

																		Disso	lved Ox	xygen		
	Waterbo	ody ID:	132		•	Site #:	3									Date: 10)/17/07			Time: 1:	:00 pm	
	Estimate	ed Chann	nel Incisio	on:	0	(m) (hei	ght betw	een low	bank wic	lth and w	vater)					Di	issolved	Oxygen:	7.57		(mg/L)	
		cation - I			, Northin				-	Estimate	PDOP										, , ,	
		UTM X					UTM Y:					3.4				Di	issolved	Oxygen:			(% sat)	
	11	UTM X	: 557792	m		. 1	UTM Y:	4365413	3m			6.6			•		Cnasif	ia Candi			(u.C./am)	١
	Average	Stream	Width:			10		(meters)	L	ength of	Survey S	Segment:	200		(meters)		Specii	ic Colla.			(μδ/cm))
	_	ermne Le						()		_	-	n width)			()	Wa	ter Tem	perature:	15.4		(°C)	
	Fiel	d Staff:	Matt Co	sby & La	auren Str	ange																
										Trai	nsect C	ross-Sec	ction									
	0	11	0	2	0	3	0	4	0	5)6	0	7	0	18		19	1	0	1	11
	Distance	1	Distance	2	Distance	3	Distance	4	Distance	3	Distance		Distance	,	Distance		Distance		Distance		Distance	11
Station	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.92	0.61	0.94	0.49	1.1	0.71	1.1	0.30	0.9	0.11		>1	1.10	0.26		>1		>1	0.94	0.26		>1
2	1.8	0.62	1.9	0.31	2.2	0.51	2.2	0.24	1.80	0.04			2.2	0.40					1.9	0.21		
_																						
3	2.8	0.60			3.4	0.18			2.7				3.4	0.14					2.8			
4	3.7	0.56	3.8	0.36	4.5	0.14	4.4	0.31	3.6	0.10			4.5	0.16					3.8	0.13	<u> </u>	
5	4.6	0.55	4.7	0.43	5.6	0.21	5.6	0.32	4.5	0.12			5.6	0.21					4.7	0.11		
6	5.5	0.52	5.6	0.50	6.7	0.33	6.7	0.37	5.4	0.07			6.7	0.09					5.6	0.15		
7	6.4	0.42	6.6		7.8	0.45	7.8		6.3	0.04			7.8	0					6.6			
,																						
8	7.4	0.38	7.5	0.42	9.0	0.51	8.9	0.40	7.2	0.03			9.0	0.37					7.5	0.21	<u> </u>	
9	8.3	0.24	8.5	0.31	10.0	0.50	10	0.34	8.1	0.01			10.1	0.52					8.5	0.29	<u> </u>	
Right Bank	9.2	0	9.4	0	11.2	0	11.1	0	9.0	0	6.2	0	11.2	0	10	0	10	0	9.4	0	10	0
Feature Type																						
(riffle, run, or pool)	R	un	Ri	un	R	un	Rı	un	Rif	fle	Po	ool	R	un	R	un	R	un	R ¹	un	Pe	ool

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Data Sheet B - Site Characterization

(must be completed for each site)

	Date &	Гіте:	10/17/07 2	2:20 pm			Site Location Des				ıg):	
	Personne	el (Da	ta Collectoi	rs): Matt Cosby, L	auren S	Strange	Upstream of road	cros	ssing a	al Y Y		
	Current	Weath	er Conditio	ons: Cloudy 60°			Facility Name: Re	enicl	k WW	TF		
	Weather	Cond	itions for P	ast 10 days: 4.29	inches	of rain	Permit Number: N	MO (01040	19		
	Drought	Cond	itions?: No	drought □; Phase	ı I x; Pl	hase II □	; Phase III □; Phase	IV	□; Un	known □		
Si	te Locat		ODDINATES	C (ININ/EDCAL TDA	MOVED	OCE MED	CATOR RRO IECTION	I IN	METE	EDC)		
	LOCATIO	JN CO	ORDINATE	S (UNIVERSAL TRA	INSVER	KSE MERC	CATOR PROJECTION					
	Site 01	East	ing (UTM	X): 560111m	Nor	thing (U	ΓM Y): 4366494m]	PDOF		5.1	
	Site 11	East	ing (UTM	X): 560242m	Nor	thing (UT	ΓM Y): 4366605m		Horizo PDO F	ontal Accuracy:	7.5	
Ph	otos: Se	e att		otos and desc								
	Photo II	D#	Pho	to Purpose	Photo	ID#	Photo Purpo	se		Photo ID#	Photo Pu	ırpose
	Photo II	D#	Pho	to Purpose	Photo	ID#	Photo Purpo	se		Photo ID#	Photo Pu	ırpose
	Photo II	D#	Pho	to Purpose	Photo	ID#	Photo Purpo	se		Photo ID#	Photo Pu	ırpose
						<u> </u>				1		
Us	es Obse	rved	*: (Uses actu	ally observed at time	of survey	v.)						
	☐ Swin	nming		☐ Skin diving		□ SCU	JBA diving		Tubi	ng	☐ Water sl	kiing
	□ Wine	l curfi	na	□ Kayaking		ПВоз	ting		Wad	ing	□ Rafting	

Data Sheet B Page 1 of 3

☐ Fishing

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D-Recreational Use Interview

X None of the above

☐ Other:

☐ Trapping

Revised: September 4, 2007

☐ Hunting

when conducting interviews.)

Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

Su	rrounding Condit	ions*: (Mark all that pro	mote or impede recreational us	ses. Attach photos of ev	dence or unusual it	ems of inte	rest.)	
	☐ City/county parks	□ Playgrounds	☐ MDC conservation	ı lands 🔲 Urb	an areas	□R	tural Residential	
	☐ Campgrounds	☐ State parks	☐ National forests	□ Nat	are trails	□s	tairs/walkway	
	☐ Boating accesses	X Fence	☐ No trespass sign	X Stee	p slopes	□с	Other:	
	Comments: None	,		·				
Ev	idence of Human	Use*: (Attach photos and	d reference in "Photos" section	u)				
	☐ Roads	☐ Foot paths/prin	nts Dock/platfor	m 🗆 Camp	ing Sites	□ Rope	e swings	
	□ RV / ATV Tracks Comments / Other:	s ☐ Fire pit/ring	☐ NPDES Disc	harge	g Tackle	X Lives	stock Watering	
Su	bstrate*: (These valu	es should add up to 100%.)						
	% Cobble	50% Gravel	20% Sand	% Silt	30% Muc	d/Clay	% Bedrock	
Aq	uatic Vegetation*	(Note amount of vegetation	n or algal growth at the assess	ment site)				
W	ater Characteristics*: (Mark all that apply.)							
	Odor:	☐ Sewage ☐ M	lusky Chemic	al 🗆 None	X Ot	ther: cow	excrement	
	Color:	□ Clear □ G	reen X Gray	X Milky	□ 0	ther:		
	Bottom Deposit:	□ Sludge X So	olids X Fine sed	iments None	□ o	ther:		
	Surface Deposit:	□ Oil □ So	cum 🗆 Foam	X None	□ O	ther:		

Data Sheet B Page 2 of 3

^{*}This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

1	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		l			
Comments: (Please recor	d any additional comments here	.)			
Please verify that yo	u have completed all	sections, checke	ed all applicable	e boxes, and that tl	he form is
Please verify that you	u have completed all	sections, checke	ed all applicable	e boxes, and that tl	he form is
	u have completed all	sections, check	ed all applicable	e boxes, and that th	he form is
complete.	-			e boxes, and that tl	he form is
complete.	u have completed all			e boxes, and that the control of the	
omplete. urveyor's Signature:	-			y:_10/17/07_	

Data Sheet C - Field Survey Results

																		Disso	lved Ox	xygen		
	Waterbo	ody ID:	132		-	Site #:	4		•							Date: 10)/17/07			Time: 2	:20 pm	
	Estimate	ed Chann	nel Incisi	on:	0	(m) (hei	ght betw	een low	bank wic	lth and w	rater)					,			•		-	
	GPS Lo	cation - I	Easting (UTM X)	, Northir	ng (UTM	Y), Hor	izontal A	ccuracy	Estimate	PDOP					Di	issoived	Oxygen:	8.08		(mg/L)	
		UTM X				-	UTM Y:				•	5.1				Di	issolved	Oxygen:			(% sat)	
	11	UTM X	: 560242	m		-	UTM Y:	4366603	5m			7.5					Specif	ic Cond:			(µS/cm)	
	Average	Stream	Width:			8		(meters)	L	ength of	Survey S	Segment:	160		(meters)		Бресп	e cona.			. (μο/ επι)	
	(To dete	ermne Le	ngth of F	Reach)					(2	0x avera	ge strear	n width)				Wa	ter Temp	erature:	14.7		(°C)	
	Fiel	d Staff:	Matt Co	sby & L	auren St	range																
										Trai	nsect C	ross-Sec	ction									
	0	1	0	2	()3	0	4	0	5	0	16	0	7	0	8	0	9	1	.0	1	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.48	0.12	0.51	0.31		>1	0.74	0.32	0.82	0.14	0.57	0.04	0.61	0.12	0.57	0.40	0.64	0.13	0.78	0.32	0.81	0.20
2	0.96	0.14	1.0	0.44			1.5	0.54	1.6	0.10	1.1	0.04	1.2	0.21	1.1	0.50	1.3	0.21	1.6	0.30	1.60	0.14
3	1.4	0.08	1.5	0.40			2.2	0.68	2.5	0.06	1.7	0.06	1.8	0.24	1.7	0.44	1.9	0.47	2.3	0.31	2.4	0.11
4	1.9	0.09	2.0	0.32			3.0	0.57	3.3	0	2.3	0.10	2.4	0.38	2.3	0.35	2.6	0.51	3.1	0.34	3.2	0.08
5	2.4	0.06	2.6	0.31			3.7	0.61	4.1	0	2.9	0.13	3.1	0.50			3.2	0.48	3.9	0.27	4.1	0.10
6	2.9	0.07	3.1	0.20			4.4	0.60	4.9	0.04	3.4	0.12	3.7	0.54	3.4	0.31	3.8	0.46	4.7	0.22	4.9	0.12
7	3.4	0.06					5.2	0.64	5.7	0.06	4.0		4.3	0.61	4.0		4.5	0.35			5.7	0.13
8	3.8	0		0.15			5.9		6.6		4.6		4.9	0.58	4.6		5.1	0.28			6.5	0.08
9	4.3	0.03	4.6				6.7	0.65	7.4	0.09	5.1	0.10	5.5	0.44	5.1	0.12	5.8	0.18			7.3	0.05
Right Bank	4.8	0	5.1	0	7	0	7.4	0	8.2	0	5.7	0	6.1	0	5.7	0	6.4	0	7.8	0	8.1	0
Feature Type																		-				-
(riffle, run, or pool)	Rif	fle	Rif	ffle	Po	ool	R	un	Rif	fle	Ri	ffle	Po	ool	R	un	R	un	Rı	un	Rı	ın

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 10/18/07 7:30 am	Site Location Description (e.g., road crossing): Downstream of road crossing at 2355
Personnel (Data Collectors): Matt Cosby, Lauren Strange	Downstream of foad crossing at 2555
Current Weather Conditions: Cloudy 60°	Facility Name: Renick WWTF
Weather Conditions for Past 10 days: 4.9 inches of rain	Permit Number: MO 0104019
Drought Conditions?: No drought □; Phase I x; Phase II □	Phase III □; Phase IV □; Unknown □
	* * * * * * * * * * * * * * * * * * * *

Site Location:

LOCATIO	ON COORDINATES (UNIVERSAL TRAN	NSVERSE MERCATOR PROJECTION, I	IN METERS)	
Site 01	Easting (UTM X): 553713m	Northing (UTM Y): 4362339m	Horizontal Accuracy: PDOP	6.6
Site 11	Easting (UTM X): 553818m	Northing (UTM Y): 4362429m	Horizontal Accuracy: PDOP	5.0

Photos: See attached photos and descriptions

iotos. See atta	icheu photos and des	CHPHOUS						
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo Purpose				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose			
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose			

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	SCUBA diving ☐ Tubing								
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting							
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:							
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)											

Data Sheet B Page 1 of 3

Site # 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

Surrounding Cond	litions*: (Mark all	that promote or	impede recreational uses. Attack	h photos of evid	ence or unusual i	tems of int	terest.)		
☐ City/county par	ks 🗆 Playgr	ounds 🗆 1	MDC conservation lands	☐ Urbaı	n areas	X F	Rural Residential		
☐ Campgrounds	☐ State p	arks 🗆 1	National forests	☐ Natur	e trails	☐ Stairs/walkway			
☐ Boating accesse	es	ו 🗆	No trespass sign	X Steep	slopes		☐ Other:		
Comments: None	·	·							
Evidence of Huma	n Use*: (Attach pl	notos and refere	nce in "Photos" section)						
□ Roads	☐ Foot par	ths/prints	☐ Dock/platform	☐ Campin	g Sites	☐ Rope swings			
X RV / ATV Track	ks	ring	☐ NPDES Discharge	☐ Fishing	Tackle	X Livestock Watering			
Comments / Other:	1			,					
0 1 4 4 th									
Substrate*: (These va			10% Sand	27.21	000/25	1/61			
% Cobble	% Cobble 10% Gravel			% Silt	80% Mu	ıd/Clay % Bedrock			
Aquatic Vegetation	1*: (Note amount of	vegetation or alg	al growth at the assessment site)	<u> </u>					
None									
	4° str								
Water Characteris									
	☐ Sewage	☐ Musky	☐ Chemical			ther:			
Color:	□ Clear	☐ Green	X Gray	X Milky		ther:			
Bottom Deposit:	☐ Sludge	□ Solids	X Fine sediments	□ None		ther:			
Surface Deposit:	□ Oil	□ Scum	☐ Foam	X None		ther:			

Data Sheet B Page 2 of 3

^{*}This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
			I		
Comments: (Please record	d any additional comments here	a.)			
	u have completed all	l sections, check	ted all applicabl	e boxes, and that tl	he form is
	u have completed all	l sections, check	ed all applicabl	e boxes, and that tl	he form is
Please verify that you complete.	u have completed all	l sections, check	ed all applicabl	e boxes, and that tl	he form is
omplete.	-			e boxes, and that tl y: 10/18/07	
omplete. Surveyor's Signature:	u have completed all		Date of Surve	y: <u>10/18/07</u>	

Data Sheet C - Field Survey Results

																		Disso	lved Ox	ygen			
	Waterb	ody ID:	132			Site #:	5									Date: 10	0/17/07			Time: 7	30 am		
		ed Chanr				(m) (hei					,					D:	issolved	Oxygen:	7.39		(mg/L)		
						ng (UTM				Estimate	PDOP												
	01	01 UTM X: 553713m UTM Y: 4362339m 6.6									Dissolved Oxygen:(% sat)												
	111	11 UTM X: 553818m UTM Y: 4362429m 5.0									Specif	ia Condi	:(μS/cm)										
	Averag	e Stream	Width:			5		(meters)	L	ength of	Survey S	Segment:	150		(meters)		Specif	ic Cond.			(μο/спі)		
		ermne Le						()	•	_	ge strean	_			()	Wa	iter Tem	perature:	15.4		(°C)		
	Fie	ld Staff:	Matt Co	sby & L	auren St	range																	
										Tra	nsect Ci	ross-Sec	ction			1							
														_									
	Distance)1 	Distance) <u>2</u>	Distance) <u>3</u>	Distance)4 	Distance)5 T	0 Distance	6	0 Distance	7	Distance	8 I	Distance)9 	Distance	0	Distance	1	
Station	(m)	Depth (m)	1	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)		Depth (m)		Depth (m)	(m)	Depth (m)	(m)	Depth (m)		Depth (m)		Depth (m)	
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1		>1		>1		>1		>1		>1	0.39	0.29	0.34	0.20		>1		>1	0.55	0.30	0.29	0.25	
2				-		-					0.78	0.35						-	1.1	0.44	0.58		
2														0.35								0.45	
3											1.2	0.39	1.0	0.52					1.7	0.54	0.87	0.65	
4											1.6	0.45	1.4	0.66					2.2	0.50	1.2	0.46	
5											2.0	0.56	1.7	0.73					2.8	0.51	1.5	0.34	
6											2.3	0.64	2	0.68					3.3	0.60	1.7	0.18	
-											2.7								3.9		2.0		
,												0.62		0.65						0.61			
8											3.1	0.51	2.7	0.56					4.4	0.58	2.3	0.05	
9											3.5	0.32	3.1	0.43					5.0	0.51	2.6	0.04	
Right Bank	5	0	6	0	6	0	5	0	6.0	0	3.9	0	3.4	0	8	0	7	0	5.5	0	2.9	0	
Feature Type	, n		_ n		_ n		ח		ח	201	D:4	eel o	Rit	eri.	ъ.	va1	_ n	0.01	n.		Rif	eff.	
(riffle, run, or pool)	ın, or pool) Run Run		un Run Run Pool Rit						ше	[Kl	ne	Po	JUI	į P	ool	Rı	J11	KII	116				

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

*Pictures for Transect 11 without dry-erase board (have pole in them)



Site# 1 Photo ID# 1-D, Downstream Transect 1



Site# 1 Photo ID# 11-D, Downstream Transect 11



Site# 1 Photo ID# 1-U, Upstream Transect 1



Site# 1 Photo ID# 11-U, Upstream Transect 11



Site# 2 Photo ID# 1-D, Downstream Transect 1



Site# 2 Photo ID# 11-D, Downstream Transect 11



Site# 2 Photo ID# 1-U, Upstream Transect 1



Site# 2 Photo ID# 11-U, Upstream Transect 11



Site# 3 Photo ID# 1-D, Downstream Transect 1



Site# 3 Photo ID# 11-D, Downstream Transect 11



Site# 3 Photo ID# 1-U, Upstream Transect 1



Site# 3 Photo ID# 11-U, Upstream Transect 11



Site# 3 Photo ID# 5, Low Water Crossing



Site# 4 Photo ID# 1-U, Upstream Transect 1



Site# 4 Photo ID# 1-D, Downstream Transect 1



Site# 4 Photo ID# 11-D, Downstream Transect 11



Site# 4 Photo ID# 11-U, Upstream Transect 11



Site# 5 Photo ID# 1-U, Upstream Transect 1



Site# 5 Photo ID# 1-D, Downstream Transect 1



Site# 5 Photo ID# 11-D, Downstream Transect 11



Site# 5 Photo ID# 11-U, Upstream Transect 11



Site# 5 Photo ID# 11, ATV tracks